

WHAT IS CLAIMED IS:

1. A method, comprising:
calculating a course between two or more waypoints;
5 analyzing cartographic data for the course for user identified criteria to avoid; and
providing an alert signal when the course contains user identified criteria.
2. The method of claim 1, wherein calculating the course includes calculating the
course to avoid the user identified criteria between the two or more waypoints.
- 10 3. The method of claim 2, wherein calculating the course includes identifying one or
more non-user waypoints on the course.
4. The method of claim 1, wherein calculating the course include re-calculating the
15 course to avoid the user identified criteria between the two or more waypoints when one
or more user identified criteria are identified between the two or more waypoints.
5. The method of claim 1, further including;
determining a present location on the course based on a signal from a global
20 positioning system (GPS); and
analyzing cartographic data for a predetermined area around the present location
for user identified criteria to avoid.
6. The method of claim 5, further including providing an alert signal when the
25 analyzed cartographic data for the predetermined area around the present location
includes user identified criteria.
7. The method of claim 1, further including receiving user identified criteria selected
from the group of a predetermined grade, a swamp, a lake, a river, a gorge, a cliff, ice,
30 composition of path surface, non-wheelchair accessible, ranking value, and a terrain
difficulty level.

8. A method for calculating a course, comprising:

analyzing cartographic data between two or more waypoints for user identified criteria to avoid; and

5 performing a route calculation algorithm to calculate a course that includes the two or more waypoints with a preference to avoid user identified criteria.

9. The method of claim 8, wherein performing the route calculation algorithm includes re-calculating the course to avoid the user identified criteria between the two or
10 more waypoints in response to a user input.

10. The method of claim 8, wherein the course calculated by the route calculation algorithm further includes identifying one or more non-user waypoints on the course.

15 11. The method of claim 8, further including;

determining a present location on the course based on a signal from a global positioning system (GPS); and

analyzing cartographic data for a predetermined area around the present location for user identified criteria to avoid.

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12. The method of claim 11, further including providing an alert signal when the analyzed cartographic data for the predetermined area around the present location includes user identified criteria.

25 13. The method of claim 11, further including receiving user identified criteria selected from the group of a predetermined grade, a swamp, a lake, a river, a gorge, a cliff, ice, composition of path surface, non-wheelchair accessible, ranking value, and a terrain difficulty level.

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14. A method, comprising:
determining a present location based on a signal from a global positioning system (GPS); and
analyzing cartographic data for a predetermined area around the present location
5 for user identified criteria to avoid.

15. The method of claim 14, further including providing an alert signal when the analyzed cartographic data for the predetermined area around the present location includes user identified criteria.

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16. The method of claim 14, wherein the predetermined area includes radii extending along a heading from the present location.

17. The method of claim 16, wherein the radii includes an angle formed from line
15 segments emanating from the present location.

18. The method of claim 17, wherein the angle includes selectable values of greater than 0° degrees to 360° degrees.

20 19. The method of claim 16, wherein the radii extend a predetermined distance along the heading from the present location.

20. The method of claim 14, further including receiving user identified criteria selected from the group of a predetermined grade, a swamp, a lake, a river, a gorge, a
25 cliff, ice, composition of path surface, non-wheelchair accessible, ranking value, and a terrain difficulty level.

21. A method, comprising:
determining a heading;
30 analyzing the heading for user identified criteria to avoid; and
providing an alert signal when the heading contains user identified criteria.

22. The method of claim 21, wherein determining the heading includes determining the heading from an electronic compass signal.

5 23. The method of claim 21, further including determining one or more positions using a global positioning system (GPS) signal, and recording a track log based on the one or more positions, wherein determining the heading includes determining the heading based on the track log.

10 24. The method of claim 21, further including performing a route calculation algorithm to calculate a route to avoid the user identified criteria.

25. The method of claim 24, further including displaying the route to avoid the user identified criteria.

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26. The method of claim 21, further including;
determining a present location on the course based on a signal from a global positioning system (GPS); and
analyzing cartographic data for a predetermined area around the present location
20 for user identified criteria to avoid.

27. The method of claim 26, further including providing an alert signal when the analyzed cartographic data for the predetermined area around the present location includes user identified criteria.

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28. The method of claim 21, further including receiving user identified criteria selected from the group consisting of a predetermined grade, a swamp, a lake, a river, a gorge, a cliff, ice, composition of path surface, non-wheelchair accessible, ranking value, and a terrain difficulty level.

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29. A computer readable medium having a set of computer readable instructions for causing a device to perform a method that comprises:

- calculating a course between two or more waypoints;
- analyzing cartographic data for the course for user identified criteria to avoid; and
- 5 providing an alert signal when the course contains user identified criteria.

30. The computer readable medium of claim 29, wherein calculating the course includes performing a route calculation algorithm to calculate the course between the two or more waypoints with a preference for avoiding user identified criteria.

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31. The computer readable medium of claim 30, wherein performing the route calculation algorithm includes calculating the course that avoids user identified criteria between the two or more waypoints.

15 32. The computer readable medium of claim 30, wherein the method further includes re-calculating the course to avoid the user identified criteria between the two or more waypoints when the route calculation algorithm identifies one or more user identified criteria between the two or more waypoints.

20 33. The computer readable medium of claim 29, wherein calculating the course includes identifying one or more non-user waypoints on the course.

34. The computer readable medium of claim 29, further including;
determining a present location on the course based on a signal from a global
25 positioning system (GPS); and
analyzing cartographic data for a predetermined area around the present location for user identified criteria to avoid.

35. The computer readable medium of claim 34, further including providing an alert
30 signal when the analyzed cartographic data for the predetermined area around the present location includes user identified criteria.

36. The computer readable medium of claim 29, further including receiving user identified criteria selected from the group consisting of a predetermined grade, a swamp, a lake, a river, a gorge, a cliff, ice, composition of path surface, non-wheelchair
5 accessible, ranking value, and a terrain difficulty level.

37. A navigation device, comprising:

a processor;

an input operatively coupled to the processor, wherein the input receives two or
10 more waypoints; and

a memory operatively coupled to the processor and the input, the memory having cartographic data including user identified criteria, wherein the processor operates on a route calculation algorithm to calculate a course between the two or more waypoints based on the user identified criteria of the cartographic data.

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38. The navigation device of claim 37, wherein the processor operates on the route calculation algorithm to analyze cartographic data for the course to identify and avoid user identified criteria in the course between the two or more waypoints.

20 39. The navigation device of claim 37, wherein the processor operates on the route calculation algorithm to generate a signal for an alert signal when the course contains user identified criteria.

40. The navigation device of claim 37, wherein the processor operates on the route
25 calculation algorithm to avoid the user identified criteria by re-calculating the course to avoid the user identified criteria between the two or more waypoints when the route calculation algorithm identifies one or more user identified criteria between the two or more waypoints.

41. The navigation device of claim 37, wherein the processor operates on the route calculation algorithm to identify one or more non-user waypoints between the two or more waypoints.

5 42. The navigation device of claim 37, further including a transceiver operably coupled to the processor to wirelessly transmit and receive voice data signals with an electronic device.

43. The navigation device of claim 42, wherein the transceiver is operable to transmit
10 and to receive voice data signals on a Family Radio Service (FRS) frequency.

44. A navigation device, comprising:
a processor;
a receiver for a global positioning system (GPS) operatively coupled to the
15 processor; and
a memory operatively coupled to the processor, the memory having cartographic data including user identified criteria, wherein the processor determines a present location value based on a signal received from the GPS, and analyzes cartographic data for a predetermined area around the present location value for user identified criteria to avoid.

20 45. The navigation device of claim 44, wherein the processor provides an alert signal when the analyzed cartographic data for the predetermined area around the present location value includes user identified criteria.

25 46. The navigation device of claim 44, wherein the processor operates on a track log algorithm to record a track log based on a series of the present location value, and operates on a heading algorithm to determine a heading based on the track log, wherein the processor further operates on an analysis algorithm to analyzes cartographic data of the heading for the user identified criteria, and wherein the processor generates a signal
30 for an alert signal when the heading contains user identified criteria.